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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,485	09/27/2005	Didier Frachon	268846US6PCT	5342
22850 7590 05/20/2008 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER WHITTINGTON, KENNETH				
ART UNIT 2862		PAPER NUMBER		
NOTIFICATION DATE 05/20/2008		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/530,485

Applicant(s)

FRACHON ET AL.

Examiner

KENNETH J. WHITTINGTON

Art Unit

2862

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2008.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-34 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) 34 is/are allowed.
6) ☒ Claim(s) 18-34 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 27 September 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

The Request for Continued Examination filed April 17, 2008 has been accepted and the Amendment filed therewith has been entered and considered.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the at least one magnet being adhesively bonded to a T-shaped ferromagnetic piece as recited in claim 25 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the

several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Initially, it is noted that claims 18-33 are product by process claims. Accordingly, any prior art apparatus or combination thereto that reads on the product discloses or teaches the features of the product by process claims, notwithstanding the recited process steps. See MPEP2113.

Claims 18, 19, 23, 24, 26, 27 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Dilger et al. (US5670876),

hereinafter Dilger. Regarding claim 18, Dilger discloses a position transducer made by a process including:

a target made of a ferromagnetic material (See Dilger FIGS. 1-5, item 20);

at least one magnet, the target and the at least one magnet defining between one another an air gap (See FIGS. 1-5, items 32 and 34);

a magnetosensitive element detecting a variation of induction caused in the air gap by displacement of the target relative to the at least one magnet (See FIGS. 1-5, item 36),

wherein the at least one magnet is magnetized along a direction substantially perpendicular to a front surface of the at least one magnet bounding one edge of the air gap, the at least one magnet having a cavity opening on the front surface of the at least one magnet, the magnetosensitive element being seated in the cavity, the target having a geometric configuration such that the variation of induction as a function of the position of the target corresponds to a predefined function (See FIGS. 1-5, note magnetization of magnet, structure and orientation of sensor in cavity between magnet).

Regarding the recited process steps, since Dilger discloses the recited product limitations, it discloses the process steps for making thereof.

Regarding claim 19, Dilger discloses the target is translationally mobile along an axis perpendicular to an axis of magnetization of the at least one magnet (See FIGS. 1-5, note displacement direction 24).

Regarding claim 23, Dilger discloses the plane of the displacement of the target takes place is included in a plane passing through the center of the magnetosensitive element (See FIGS. 1-7).

Regarding claim 24, Dilger discloses a ferromagnetic piece adhesively bonded to the back of the at least one magnet (See FIGS. 1-5, item 42).

Regarding claim 26, Dilger discloses the target having a particular shape configured to deliver a linear induction as a function of the displacement of the target (See FIGS. 1-5, note direction and orientation and col. 5, lines 12-32).

Regarding claim 27, Dilger discloses the magnetosensitive element is placed in the cavity in a zone of minimal induction (See FIGS. 6 and 7).

Regarding claim 31, Dilger discloses the target having a shape to generate a variation of thickness of the air gap that is function of position relative to the target (See FIGS. 1-7).

Claims 18, 20, 23-25, 31 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Hattori et al. (US4424705), hereinafter Hattori. Regarding claim 18, Hattori discloses:

a target made of a ferromagnetic material (See Hattori FIG. 4, item 12);

at least one magnet, the target and the magnet defining between one another an air gap (See FIG. 4, item 13);

a magnetosensitive element detecting a variation of induction caused in the air gap by displacement of the target relative to the at least one magnet (See FIG. 4, item 17),

wherein the at least one magnet is magnetized along a direction substantially perpendicular to a front surface of the at least one magnet bounding one edge of the air gap, the at least one magnet having a cavity opening on the front surface of the magnet, the magnetosensitive element being seated in the cavity, the target having a geometric configuration such that the variation of induction as a function of the position of the

target corresponds to a predefined function (See FIG. 4, note magnetization of magnet, structure and orientation of sensor in cavity between magnet).

Regarding the recited process steps, since Hattori discloses the recited product limitations, it discloses the process steps for making thereof.

Regarding claim 20, Hattori discloses the target translationally mobile along an axis parallel to an axis of magnetization of the at least one magnet (See FIG. 4).

Regarding claim 23, Hattori discloses the plane of the displacement of the target takes place is included in a plane passing through the center of the magnetosensitive element (See FIG. 4, note structure).

Regarding claim 24, Hattori discloses a ferromagnetic piece adhesively bonded to the back of the at least one magnet (See FIG. 4, item 14).

Regarding claim 25, Hattori discloses the at least one magnet adhesively bonded to a T-shaped ferromagnetic piece (See FIG. 4, items 14 and 17).

Regarding claim 31, Hattori discloses the target having a shape to generate a variation of thickness of the air gap that

is function of position relative to the target (See FIG. 4 and disclosure related thereto).

Regarding claim 32, Hattori discloses the at least one magnet and the magnetosensitive element are disposed opposite a ferromagnetic membrane configured to be deformed under effect of a force applied vertically to a membrane (See FIG. 4 and disclosure related thereto).

Claims 18, 21 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Carr et al. (US4745363), hereinafter Carr. Regarding claim 18, Carr discloses:

a target made of a ferromagnetic material (See Carr FIGS. 1-4, wheel with teeth 16, 18, 20);

at least one magnet, the target and the at least one magnet defining between one another an air gap (See FIGS. 1-4, item 10);

a magnetosensitive element detecting a variation of induction caused in the air gap by displacement of the target relative to the at least one magnet (See FIGS. 1-4, item 14),

wherein the at least one magnet is magnetized along a direction substantially perpendicular to a front surface of the at least one magnet bounding one edge of the air gap, the at

least one magnet having a cavity opening on the front surface of the magnet, the magnetosensitive element being seated in the cavity, the target having a geometric configuration such that the variation of induction as a function of the position of the target corresponds to a predefined function (See FIGS. 1-4, note magnetization of magnet, structure and orientation of sensor in cavity between magnet).

Regarding the recited process steps, since Carr discloses the recited product limitations, it discloses the process steps for making thereof.

Regarding claim 21, Carr discloses the target is rotationally mobile around a shaft perpendicular to an axis of magnetization of the at least one magnet (See FIGS. 1-4).

Regarding claim 33, Carr discloses the recited analog position sensor of claim 21 (See above).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 18, 21 and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woyton (US3916326) in view of Jansseune (US6043646). Regarding these claims, Woyton teaches:

a target made of a ferromagnetic material, the target comprising three spiral teeth and having a measurable angular travel of 360 degrees (See Woyton FIG. 1, item 14);

a magnetosensitive element detecting a variation of induction caused in the air gap by displacement of the target relative to the at least one magnet (See FIGS. 1-4, item 14),

wherein the target has a geometric configuration such that the variation of induction as a function of the position of the target corresponds to a predefined function (See FIG. 1, note structure and orientation of target and sensor).

However, Woyton does not teach the recited sensor/magnet arrangement. Jansseune teaches a sensor arrangement for detecting the passing of a ferromagnetic passing part comprising at least one magnet, the target and magnet defining an air gap, the at least one magnet is magnetized in a direction perpendicular to a front surface of the at least one magnet towards the air gap, the direction being perpendicular to the movement of the target, the at least one magnet having a cavity with a magnetosensitive sensor seated therein (See Jansseune FIG. 1, note magnet, sensor and orientation in relation to moving part). It would have been obvious at the time the invention was made to incorporate the sensor arrangement of

Jansseune into the apparatus of Woyton. One having ordinary skill in the art would have been motivated to do so because such are equivalent sensors for measuring passing of a magnetic part and the sensor of Jansseune provides a sensor that is simply constructed and easy to produce (See Jansseune col. 1, lines 37-40).

Regarding the recited process steps, since Woyton in view of Jansseune teaches the recited product limitations, it discloses the process steps for making thereof.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Carr in view of McDearmon et al. (US20040017190), hereinafter McDearmon. Regarding this claim, Carr discloses the magnet/sensor axis perpendicular to the axis of rotation of the wheel, but not parallel. McDearmon teaches a rotary position sensor that is magnetically back biased wherein the magnet/sensor axis is either perpendicular or parallel to the rotational axis of the wheel (See McDearmon FIGS. 2 and 3, and paragraph 0022). It would have been obvious at the time the invention was made to use either oriented sensor arrangement such that the magnet/sensor is axially oriented as taught by McDearmon. One having ordinary skill in the art would do this

because each are equal orientations to measure the rotation of a magnetic wheel as shown in FIGS. 2 and 3 of McDearmon.

Allowable Subject Matter

Claim 34 is allowed. It is allowed for those reasons outlined in the Final Office Action mailed December 17, 2007.

Response to Arguments

Applicants' arguments filed April 17, 2008 have been fully considered but they are not persuasive.

Drawings Objections

Applicants' argue that FIG. 17 shows the features of claim 25. Claim 25 recites that the at least one magnet is bonded to a t-shaped ferromagnetic piece. Note that claim 1, from which claim 25 depends, requires the at least one magnet to have a cavity therein. The features of claim 25 must be consistent with those of claim 1, i.e., the at least one magnet still have a cavity therein and a t-shaped ferromagnetic piece bonded thereto such that the sensor is seated in the cavity. FIG. 17 only concerns a t-shaped ferromagnetic piece, but no cavity or location of the sensor. Therefore, claim 25 remains unshown in the drawings.

Applicants have stated that since the separate pieces of these features are shown, the claim is shown. However, the feature of importance here is the magnet with the t-shaped ferromagnetic piece. Claim 25 requires at least one magnet having a cavity opening on the front surface therein and having a t-shaped piece adhesively bonded thereto, the sensor being seated in this cavity. FIG. 17, cited by Applicants as having these features, merely illustrates a t-shaped piece, but no cavity in the front surface thereof. Thus, FIG. 17 is missing the recited combination of features to the at least one magnet.

Applicants' have also asserted there is no authority for such a requirement. However, 37 CFR requires every feature of the invention specified in the claims must be shown. Such requirement aids in the understanding of the invention. The magnet as required in claim 25, having both a cavity and a t-shaped piece bonded thereto is not shown in the drawings, thus it is unclear how Applicants have incorporate a t-shaped ferromagnetic piece in the at least one magnet with a cavity therein for the seating of the sensor.

Accordingly, the objection to the drawings remains.

Remarks Regarding the Prior Art Rejections

Applicants have made no arguments regarding the art rejections and thus no remarks are necessary.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENNETH J. WHITTINGTON whose telephone number is (571)272-2264. The examiner can normally be reached on Monday-Friday, 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Assouad can be reached on (571) 272-2210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

/Kenneth J Whittington/
Primary Examiner, Art Unit 2862